

## **Specificity of ion induced damage**

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In materials which are sensitive to radiolysis such as ionic crystals and polymers, energetic heavy ions (MeV-GeV) create cylindrical tracks with a complex damage structures consisting of a small core region surrounded by a much larger halo. In the track core, specific defects such as the formation of triple bonds in polymers or defect clusters in alkali halides are observed. They are linked to the extremely high energy density of heavy ions, whereas modifications in the halo are similar to effects induced by conventional radiation. Using different complementing techniques such as absorption spectroscopy, small-angle X-ray scattering and chemical etching, a detailed description of the core and halo defects is presented.